

CLAIMS

1. A perfectly or partially crosslinked olefinic thermoplastic elastomer composition comprising 10 to 90 parts by weight of a crystalline polyolefin (a), 90 to 10 parts by weight of an olefin-based copolymer rubber (b) (the total amount of the components (a) and (b) being 100 parts by weight) and 3 to 100 parts by weight of a paraffinic mineral oil softening agent (c) having an evaporation loss of 0.4% by weight or less at a condition of 200 °C, atmospheric pressure and 1 hour and having a kinetic viscosity (40 °C) of 50 to 250 cst.

2. A thermoplastic elastomer composition as defined in Claim 1, wherein the mineral oil softening agent (c) has a viscosity index of 90 to 110.

3. A thermoplastic elastomer composition as defined in Claim 2, wherein the mineral oil softening agent (c) has a flash point of 200 to 290 °C and a pour point of -20 to -10 °C.

4. A thermoplastic elastomer composition as defined in Claim 1, wherein the crosslinking agent is an organic peroxide.

5. A thermoplastic elastomer composition as defined in Claim 4, wherein the gel content is 98% or less.

6. A thermoplastic elastomer composition as defined in Claim 1, wherein the crosslinking agent is a phenolic curative.

7. A thermoplastic elastomer composition as defined in Claim 6, wherein the gel content is 98% or less.

8. A thermoplastic elastomer composition as defined in Claim 1, wherein the haze value determined at a condition of 100 °C and 3 hours according to the prescription of A method of DIN 75201 is 3% or less.

9. A method for manufacturing an olefinic thermoplastic

elastomer composition, which comprises subjecting to dynamic heat treatment in the presence of a crosslinking agent 10 to 90 parts by weight of a crystalline polyolefin (a), 90 to 10 parts by weight of an olefin-based copolymer rubber (b) (the total amount of the components (a) and (b) being 100 parts by weight) and 3 to 100 parts by weight of a paraffinic mineral oil softening agent (c) having an evaporation loss of 0.4% by weight or less at a condition of 200 °C, atmospheric pressure and 1 hour and having a kinetic viscosity (40 °C) of 50 to 250 cSt.

10. An olefinic thermoplastic elastomer composition obtainable according to the manufacturing method as defined in Claim 9. /

11. A thermoplastic elastomer composition as defined in Claim 1 which is obtainable by static heat treatment, subsequent to the dynamic heat treatment, under the following conditions:
 $Q \geq 0.1$ and $t \geq 2^{-(T-110)/10}$

wherein Q is a quantity ($\text{m}^3/(\text{hour} \cdot \text{kg})$) of hot air supplied upon drying per the unit weight of the substance to be treated, t is a heat treatment time (hour) and T is a temperature (°C) of the hot air just before hitting the substance to be treated.

12. A perfectly or partially crosslinked olefinic thermoplastic elastomer composition comprising 10 to 90 parts by weight of a crystalline polypropylene resin (a'), 90 to 10 parts by weight of an olefin-based copolymer rubber (b) (the total amount of the components (a') and (b) being 100 parts by weight), 3 to 30 parts by weight of a polyethylene resin (d) and 3 to 100 parts by weight of a paraffinic mineral oil softening agent (c) having an evaporation loss of 0.4% by weight or less at a condition of 200 °C, atmospheric pressure and 1 hour and

having a kinetic viscosity (40 °C) of 50 to 250 cSt.

13. A thermoplastic elastomer composition as defined in Claim 12 which is obtainable by static heat treatment, subsequent to the dynamic heat treatment, under the following conditions:
 $Q \geq 0.1$ and $t \geq 2^{(T-110)/10}$

wherein Q is a quantity ($m^3/(\text{hour} \cdot \text{kg})$) of hot air supplied upon drying per the unit weight of the substance to be treated, t is a heat treatment time (hour) and T is a temperature (°C) of the hot air just before hitting the substance to be treated.

14. An electric apparatus or transporting machine including a member comprising a thermoplastic elastomer composition as defined in Claim 1 or Claim 12 and a member comprising glass.

15. An electric apparatus or transporting machine as defined in Claim 14, wherein said member comprising a thermoplastic elastomer composition and said member comprising glass are installed within a same enclosed space.

16. An electric apparatus or transporting machine as defined in Claim 14, wherein said member comprising a thermoplastic elastomer composition and said member comprising glass are installed 1 meter or less apart at the most adjacent portion.

17. An olefinic thermoplastic elastomer composition which is obtainable by dynamically heat treating a mixture including 40 to 85 parts by weight of an ethylene-based copolymer rubber (A), 60 to 15 parts by weight of an olefinic resin (B) and 45 parts by weight or less of a softening agent (C) (the total amount of the components (A), (B) and (C) being 100 parts by weight) in the presence of a crosslinking agent and which gives a gloss value of 80% or more and a haze value of 10% or less on glass

plate when subjected to the fogging test at a condition of 100 °C and 3 hours according to the prescription of A method of DIN 75201 using 10 g of the pellets.

18. A thermoplastic elastomer composition as defined in Claim 17 which is obtainable by static heat treatment, subsequent to the dynamic heat treatment, under the following conditions:

$$Q \geq 0.1 \text{ and } t \geq 2 \cdot (T-110)/10$$

wherein Q is a quantity ($\text{m}^3/(\text{hour} \cdot \text{kg})$) of hot air supplied upon drying per the unit weight of the substance to be treated, t is a heat treatment time (hour) and T is a temperature (°C) of the hot air just before hitting the substance to be treated.

19. A thermoplastic elastomer composition as defined in Claim 17, wherein the crosslinking agent is a bifunctional organic peroxide having two peroxide bonds in one molecule and the decomposition product thereof, diol, remains in the pellets in a concentration of 30 ppm or less.

20. A thermoplastic elastomer composition which is obtainable by static heat treatment, subsequent to the dynamic heat treatment, under the following conditions:

$$Q \geq 0.1 \text{ and } t \geq 2 \cdot (T-110)/10$$

wherein Q is a quantity ($\text{m}^3/(\text{hour} \cdot \text{kg})$) of hot air supplied upon drying per the unit weight of the substance to be treated, t is a heat treatment time (hour) and T is a temperature (°C) of the hot air just before hitting the substance to be treated.

21. A molding obtainable by molding a thermoplastic elastomer composition as defined in any one of Claims 17 to 20.

22. Moldings as defined in Claim 21 which are interior parts for automobile.

23. A method for manufacturing an olefinic thermoplastic

elastomer composition, which comprises subjecting a mixture including 40 to 85 parts by weight of an ethylene-based copolymer rubber (A), 60 to 15 parts by weight of an olefinic resin (B) and 45 parts by weight or less of a softening agent (C) [the total amount of the components (A), (B) and (C) being 100 parts by weight] to dynamic heat treatment in the presence of a crosslinking agent and to subsequent static heat treatment under the following conditions:

$$Q \geq 0.1 \text{ and } t \geq 2^{-(T-110)/10}$$

wherein Q is a quantity ($\text{m}^3/(\text{hour} \cdot \text{kg})$) of hot air supplied upon drying per the unit weight of the substance to be treated, t is a heat treatment time (hour) and T is a temperature ($^{\circ}\text{C}$) of the hot air just before hitting the substance to be treated.